

Class 7 material, any loose Class 7 material, associated packaging material, and any other materials that have been contaminated must be segregated as far as practicable from personnel contact until radiological advice or assistance is obtained from the U.S. Department of Energy or appropriate State or local radiological authorities.

(c) An aircraft in which Class 7 material has been released must be taken out of service and may not be returned to service or routinely occupied until the aircraft is checked for radioactive contamination and it is determined in accordance with §173.443 of this subchapter that the dose rate at every accessible surface is less than 0.005 mSv per hour (0.5 mrem per hour) and there is no significant removable surface contamination.

(d) Each aircraft used routinely for transporting Class 7 materials shall be periodically checked for radioactive contamination, and an aircraft must be taken out of service if contamination exceeds the level specified in paragraph

(c). The frequency of these checks shall be related to the likelihood of contamination and the extent to which Class 7 materials are transported.

(e) In addition to the reporting requirements of (§§171.15 and 171.16 of this subchapter and §175.31 of this part, an aircraft operator shall notify the offeror at the earliest practicable moment following any incident in which there has been breakage, spillage, or suspected radioactive contamination involving Class 7 (radioactive) materials shipments.

§175.706 Separation distances for undeveloped film from packages containing Class 7 (radioactive) materials.

No person may carry in an aircraft any package of Class 7 (radioactive) materials required by §172.403 of this subchapter to be labeled Radioactive Yellow-II or Radioactive Yellow-III closer than the distances shown in the table below to any package marked as containing underdeveloped film.

Transport index	Minimum separation distance to nearest undeveloped film for various times in transit									
	Up to 2 hours		2 to 4 hours		4 to 8 hours		8 to 12 hours		Over 12 hours	
	Meters	Feet	Meters	Feet	Meters	Feet	Meters	Feet	Meters	Feet
0.1 to 1.0	0.3	1	0.6	2	0.9	3	1.2	4	1.5	5
1.1 to 5.0	0.9	3	1.2	4	1.8	6	2.4	8	3.3	11
5.1 to 10.0	1.2	4	1.8	6	2.7	9	3.3	11	4.5	15
10.1 to 20.0 ...	1.5	5	2.4	8	3.6	12	4.8	16	6.6	22
20.1 to 30.0 ...	2.1	7	3	10	4.5	15	6	20	8.7	29
30.1 to 40.0 ...	2.4	8	3.3	11	5.1	17	6.6	22	9.9	33
40.1 to 50.0 ...	2.7	9	3.6	12	5.7	19	7.2	24	10.8	36

PART 176—CARRIAGE BY VESSEL

Subpart A—General

Sec.

176.1 Purpose and scope.

176.2 Definitions.

176.3 Unacceptable hazardous materials shipments.

176.4 Port security and safety regulations.

176.5 Application to vessels.

176.7 Documentation for vessel personnel.

176.9 "Order-Notify" or "C.O.D." shipments.

176.11 Exceptions.

176.13 Responsibility for compliance and training.

176.15 Enforcement.

176.18 Assignment and certification.

Subpart B—General Operating Requirements

176.24 Shipping papers.

176.27 Certificate.

176.30 Dangerous cargo manifest.

176.31 Special permits.

176.36 Preservation of records.

176.39 Inspection of cargo.

176.45 Emergency situations.

176.48 Situation requiring report.

176.50 Acceptance of damaged or leaking packages.

176.52 Rejections of shipments in violation.

176.54 Repairs involving welding, burning, and power-actuated tools and appliances.

Subpart C—General Handling and Stowage

176.57 Supervision of handling and stowage.

176.58 Preparation of the vessel.

Pt. 176

49 CFR Ch. I (10–1–07 Edition)

- 176.60 “No Smoking” signs.
- 176.63 Stowage locations.
- 176.65 Alternative stowage procedures.
- 176.69 General stowage requirements for hazardous materials.
- 176.70 Stowage requirements for marine pollutants.
- 176.72 Handling of break-bulk hazardous materials.
- 176.74 On deck stowage of break-bulk hazardous materials.
- 176.76 Transport vehicles, freight containers, and portable tanks containing hazardous materials.
- 176.77 Stowage of barges containing hazardous materials on board barge-carrying vessels.
- 176.78 Use of power-operated industrial trucks on board vessels.

Subpart D—General Segregation Requirements

- 176.80 Applicability.
- 176.83 Segregation.
- 176.84 Other requirements for stowage and segregation for cargo vessels and passenger vessels.

Subpart E—Special Requirements for Transport Vehicles Loaded With Hazardous Materials and Transported on Board Ferry Vessels

- 176.88 Applicability.
- 176.89 Control of transport vehicles.
- 176.90 Private automobiles.
- 176.91 Motorboats.
- 176.92 Cylinders laden in vehicles.
- 176.93 Vehicles having refrigerating or heating equipment.

Subpart F—Special Requirements for Barges

- 176.95 Applicability.
- 176.96 Materials of construction.
- 176.97 Prohibition of dump scows.
- 176.98 Stowage of hazardous materials on board barges.
- 176.99 Permit requirements for certain hazardous materials.

Subpart G—Detailed Requirements for Class 1 (Explosive) Materials

- 176.100 Permit for Divisions 1.1 and 1.2 (explosive) materials.
- 176.102 Supervisory detail.
- 176.104 Loading and unloading Class 1 (explosive) materials.
- 176.108 Supervision of Class 1 (explosive) materials during loading, unloading, handling and stowage.

STOWAGE

- 176.112 Applicability.

- 176.116 General stowage conditions for Class 1 (explosive) materials.
- 176.118 Electrical requirement.
- 176.120 Lightning protection.
- 176.122–176.124 [Reserved]
- 176.128 Magazine stowage types “A”, “C” and Special Stowage.
- 176.130 Magazine stowage Type A.
- 176.132 [Reserved]
- 176.133 Magazine stowage Type C.
- 176.134 Vehicles.
- 176.136 Special stowage.
- 176.137 Portable magazine.
- 176.138 Deck stowage.

SEGREGATION

- 176.140 Segregation from other classes of hazardous materials.
- 176.142 Hazardous materials of extreme flammability.
- 176.144 Segregation of Class 1 (explosive) materials.
- 176.145 Segregation in single hold vessels.
- 176.146 Segregation from non-hazardous materials.

PRECAUTIONS DURING LOADING AND UNLOADING

- 176.148 Artificial lighting.
- 176.150 Radio and radar.
- 176.154 Fueling (bunkering).
- 176.156 Defective packages.
- 176.160 Protection against weather.
- 176.162 Security.
- 176.164 Fire precautions and firefighting.

PASSENGER VESSELS

- 176.166 Transport of Class 1 (explosive) materials on passenger vessels.

CARGO TRANSPORT UNITS AND SHIPBORNE BARGES

- 176.168 Transport of Class 1 (explosive) materials in vehicle spaces.
- 176.170 Transport of Class 1 (explosive) materials in freight containers.
- 176.172 Structural serviceability of freight containers and vehicles carrying Class 1 (explosive) materials on ships.
- 176.174 Transport of Class 1 (explosive) materials in shipborne barges.

HANDLING CLASS 1 (EXPLOSIVE) MATERIALS IN PORT

- 176.176 Signals.
- 176.178 Mooring lines.
- 176.180 Watchkeeping.
- 176.182 Conditions for handling on board ship.
- 176.184 Class 1 (explosive) materials of Compatibility Group L.
- 176.190 Departure of vessel.
- 176.192 Cargo handling equipment for freight containers carrying Class 1 (explosive) materials.

MAGAZINE VESSELS

- 176.194 Stowage of Class 1 (explosive) materials on magazine vessels.

Subpart H—Detailed Requirements for Class 2 (Compressed Gas) Materials

- 176.200 General stowage requirements.
 176.205 Under deck stowage requirements.
 176.210 On deck stowage requirements.
 176.220 Smoking or open flame and posting of warning signs.
 176.225 Stowage of chlorine.
 176.230 Stowage of Division 2.1 (flammable gas) materials.

Subpart I—Detailed Requirements for Class 3 (Flammable) and Combustible Liquid Materials

- 176.305 General stowage requirements.
 176.315 Fire protection requirements.
 176.320 Use of hand flashlights.
 176.325 Smoking or open flame and posting of warning signs.
 176.340 Combustible liquids in portable tanks.

Subpart J—Detailed Requirements for Class 4 (Flammable Solids), Class 5 (Oxidizers and Organic Peroxides), and Division 1.5 Materials

- 176.400 Stowage of Division 1.5, Class 4 (flammable solids) and Class 5 (oxidizers and organic peroxides) materials.
 176.405 Stowage of charcoal.
 176.410 Division 1.5 materials, ammonium nitrate and ammonium nitrate mixtures.
 176.415 Permit requirements for Division 1.5, ammonium nitrates, and certain ammonium nitrate fertilizers.

Subpart K [Reserved]

Subpart L—Detailed Requirements for Division 2.3 (Poisonous Gas) and Division 6.1 (Poisonous) Materials

- 176.600 General stowage requirements.
 176.605 Care following leakage or sifting of Division 2.3 (poisonous gas) and Division 6.1 (poisonous) materials.

Subpart M—Detailed Requirements for Radioactive Materials

- 176.700 General stowage requirements.
 176.704 Requirements relating to transport indices and criticality safety indices.
 176.708 Segregation distances.
 176.710 Care following leakage or sifting of radioactive materials.
 176.715 Contamination control.
 176.720 Requirements for carriage of INF cargo in international transportation.

Subpart N—Detailed Requirements for Class 8 (Corrosive Materials) Materials

- 176.800 General stowage requirements.
 176.805 On deck stowage.

Subpart O—Detailed Requirements for Cotton and Vegetable Fibers, Motor Vehicles, and Asbestos

- 176.900 Packaging and stowage of cotton and vegetable fibers; general.
 176.901 Stowage of cotton or vegetable fibers with rosin or pitch.
 176.903 Stowage of cotton or vegetable fibers with coal.
 176.905 Motor vehicles or mechanical equipment powered by internal combustion engines.

AUTHORITY: 49 U.S.C. 5101-5127; 49 CFR 1.53.

Subpart A—General

§ 176.1 Purpose and scope.

This part prescribes requirements in addition to those contained in parts 171, 172, and 173 of this subchapter to be observed with respect to the transportation of hazardous materials by vessel.

§ 176.2 Definitions.

As used in this part—

Cantline means the v-shaped groove between two abutting, parallel horizontal cylinders.

Cargo net means a net made of fiber or wire used to provide convenience in handling loose or packaged cargo to and from a vessel.

Cargo transport unit means a transport vehicle, a freight container or a portable tank. A *closed cargo transport unit* means a cargo transport unit in which the contents are totally enclosed by permanent structures. An *open cargo transport unit* means a cargo transport unit that is not a closed cargo transport unit. Cargo transport units with fabric sides or tops are not closed cargo transport units for the purposes of this part.

Clear of living quarters means that the hazardous material must be located so that in the event of release of the material, leakage or vapors will not penetrate accommodations, machinery spaces or other work areas by means of entrances or other openings in bulkheads or ventilation ducts.